

**WHAT IS CLAIMED IS:**

1. A plant seed mixture for identifying seed with a proprietary trait using a phenotypic marker comprising:
  - about 90% to about 99.9% by weight of primary seeds for a plant variety with a genetically modified trait, said primary seeds having the dominant seed coat color of said plant varietal seeds; and
  - about 0.1% to about 10% by weight of secondary seeds of the same or different plant variety, said secondary seeds with or without a genetically modified trait, said secondary seeds having a seed coat color with at least one phenotypical difference from the primary seed coat color.
2. The plant seed mixture of claim 1 wherein the secondary seeds are homozygous for the phenotypical difference of seed coat color.
3. The plant seed mixture of claim 1 wherein the secondary seeds are a mixture of homozygous seeds and heterozygous seeds for the phenotypical difference of seed coat color.
4. The plant seed mixture of claim 1 wherein the plant is soybean, canola or wheat.
5. The plant seed mixture of claim 1 wherein the plant is soybean and the seed coat color of the secondary seeds can be determined by measuring the total light reflectance with a near-infrared spectrophotometer for wavelengths from 550 to 650 nanometers or by optical scanning technology.
6. The plant seed mixture of claim 5 wherein the seed coat color of the secondary seeds is homozygous black.

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7. The seed mixture of claim 6 wherein the homozygous black seed is RriiTT or the RRiiTT genotype.
8. The seed mixture of claim 5 wherein the seed coat color of the secondary seeds is brown.
9. The seed mixture of claim 8 wherein the brown seed is rriiTT genotype.
10. The seed mixture of claim 5 wherein the seed coat color of the secondary seeds is heterozygous yellow.
11. The seed mixture of claim 5 wherein the seed coat color of the secondary seeds is a mixture of heterozygous yellow and homozygous black seed coat colors.
12. The seed mixture of claim 5 wherein the seed coat color of the secondary seeds is a mixture of heterozygous yellow and brown seed coat colors.
13. The seed mixture of claim 1 wherein the primary seeds contain one or more genetically modified traits.
14. A method of using at least one phenotypical marker to identify seed with a proprietary trait comprising:
  - i) generating a seed plant mixture comprising :

about 90% to about 99.9% by weight of primary seeds for a plant variety with a genetically modified trait, said primary seeds having the dominant seed coat color of said plant varietal seeds; and

about 0.1% to about 10% by weight of secondary seeds of the same or different plant variety, said secondary seeds with or without a genetically

modified trait, said secondary seeds having at least one seed coat phenotypical marker difference of seed coat color.

- ii) planting and growing the seed plant mixture to produce plants and grain;
- iii) harvesting the grain from the plants;
- iv) taking a seed sample of the grain; and
- v) determining the amount of the seed coat phenotypical marker in the seed sample.

15. The method of claim 14 wherein the secondary seeds are homozygous for the seed coat color of the secondary seeds.

16. A method of generating hybrid commercial soybean seed of cultivars containing proprietary traits, the method comprising:

- i) planting homozygote black seed coat soybean plants in separate, alternate rows in the same field as cultivars containing the proprietary traits;
- ii) harvesting the grain; and
- iii) replanting the grain and harvesting the grain over at least one additional generation.

17. The method of claim 16 wherein the black seed coat seeds are used to create a mechanical mix of seeds comprising:

- i) separating the black seed coat seeds from the harvested grain;
- ii) propagating the black seed coat seeds through at least one generation of self-pollination; and
- iii) mixing a known quantity of black seed coat seed with seed of the yellow seed coat variety.

18. The method of claim 17 further comprising growing the mixture containing a known quantity of black seed coat seeds with the commercial cultivar seeds in the last season of seed increase prior to commercial sale.
19. A method for recovering licensing fees from growers of proprietary seeds or plants wherein the proprietary seeds or plants are mixed with at least one phenotypical marker and grown to produce grain comprising:
- i) accepting harvested grain from the grower at a collection point;
  - ii) taking a seed sample from the harvested grain;
  - iii) detecting the presence of the phenotypical marker in the seed sample;
  - iv) calculating the licensing fee based on the presence of the phenotypical marker in the seed sample; and
  - v) collecting the licensing fee.
20. The method of claim 19 wherein the licensing fees are calculated based on the qualitative identification of the phenotypical marker in the seed sample.
21. The method of claim 19 wherein licensing fees are calculated based on the quantitative amount of the phenotypical marker in the seed sample.
22. The method of claim 19 wherein the collection point collects the licensing fees for the proprietary seeds.
23. The method of claim 19 wherein the grower receives a voucher or rebate.
24. A method of generating homozygous and heterozygous seeds of cultivars containing proprietary traits, the method comprising:
- mixing herbicide resistant, secondary colored seed coat seeds, with non-herbicide resistant primary colored seed coat seeds to form a first seed mixture;

planting said first seed mixture in a field;  
bulk harvesting the field to produce a second seed mixture;  
planting the second seed mixture;  
spraying the field with the herbicide for which herbicide resistance exists  
for the herbicide resistant seeds;  
harvesting the remaining seed to produce a herbicidally culled seed  
mixture;  
separating, in the herbicidally culled seed mixture, the primary colored  
seed coat seeds from the other seeds, through the use of a color  
sorter; and  
retaining the primary color seed as homozygous and heterozygous seed.

25. The method in claim 24 wherein the cultivar is soybean, canola or wheat.
26. The method in claim 24 wherein the cultivar is soybean.
27. The method in claim 26 wherein the primary seed coat color is yellow.
28. The method of claim 24 wherein the secondary seed coat color can be determined by measuring the total light reflectance with a near-infrared spectrophotometer for wavelengths from 550 to 650 nanometers or by optical scanning technology.
29. The method in claim 26 wherein the secondary seed coat color is homozygous black.
30. The method in claim 29 wherein the homozygous black seed genotype is RR<sup>ii</sup>TT.
31. The method of claim 24 wherein the first seed mixture is a 10/90 to 90/10 mix.
32. The method of claim 24 wherein the first seed mixture is a 50/50 mix.

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33. The method of claim 24 wherein the first seed mixture is planted on a field at least one hectare in size.
34. The method of claim 24 wherein the second seed mixture is planted at a higher seeding rate than the first seed mixture.
35. The method of claim 24 wherein the second seed mixture is planted at double the seeding rate of the first seed mixture.
36. The method of claim 24 wherein 0.1% to about 10% by weight of the homozygous and heterozygous seed mixture is mixed with generic seeds containing proprietary traits.
37. The method of claim 24 wherein the homozygous and heterozygous seed is replanted once to produce additional generations of homozygous and heterozygous seed.
38. The method of claim 24 wherein the homozygous and heterozygous seed is replanted up to five times to produce additional generations of homozygous and heterozygous seed mixtures.
39. The method of claim 24 wherein 0.1% to about 10% by weight of the homozygous and heterozygous mixture is mixed with generic seeds containing proprietary traits to prevent the sorting out of the homozygous and heterozygous seeds.